2000 GYPSY MOTH SUPPRESSION PROJECT SUMMARY

AT

BLACKWATER NATIONAL WILDLIFE REFUTE

Rodney L. Whiteman, Forester
Forest Health Protection
USDA Forest Service
Morgantown, WV

Between April 24-30, 2000, approximately 608 acres at Blackwater National Wildlife Refuge were aerially treated to reduce gypsy moth populations and to prevent defoliation.

The biological insecticide *Bacillus thuringiensis* variety *kurstaki* (*B.t.k*) was applied undiluted at the rate of 96 ounces per acre per application. All 608 acres were treated twice. The formulation of *B.t.k.* used was Foray® 48F.

A rotary-winged aircraft equipped with a Differential Global Positioning system (DGPS) was used to apply the insecticide.

This report documents the spray equipment, insecticide, meteorological conditions, foliage and larval development, and spray coverage for the project. Treatment efficacy will be reported once defoliation surveys are conducted in June and egg mass surveys are completed this fall.

Aircraft and Spray Equipment

Contact Vendor:	Helicopter Applicators, Inc.
Aircraft:	Bell 47 Soloy
Pilot:	James Miller
DGPS Brand:	AG-NAV
Spray System:	Simplex
Nozzle Type:	AU 7000 Micronairs
Number of Nozzles:	6
Blade Angle:	35°
VRU Setting:	9
Application Rate:	96 ounces/acre
Boom Pressure:	30 psi
Air Speed:	70 mph
Swath Width:	90 feet
Flow Rate:	9.54 gpm (desired) 9.54 gpm (actual)

Meteorological Conditions

Date	Time	Application #	Temperature Range	RH Range	Wind Speed Range	Direction
4/24	0620-1100	1	48-59° F	68-92%	1-9 mph	N,NW
4/29	1855-2005	2	58-64° F	48-62%	1-2 mph	N
4/30	0603-0806	2	53-59° F	58-76%	2-7 mph	W, NW

Foliage and Larval Development

Date	Foliage Development	Larval Development
4/24	swamp white oak 35-45% willow oak 50-60% red oak 30-35% white oak 30-35%	74% first instar 26% second instar
4/29 and 4/30	swamp white oak 50-60% willow oak 70-75% red oak 50-60% white oak 35-40%	41% first instar 59% second instar

Spray Coverage

Based on observations made by personnel in the treatment blocks and by viewing the AG-NAV printouts (Appendix A), spray coverage was excellent. When an experienced pilot uses a DGPS, spray coverage is improved greatly.

Narrative

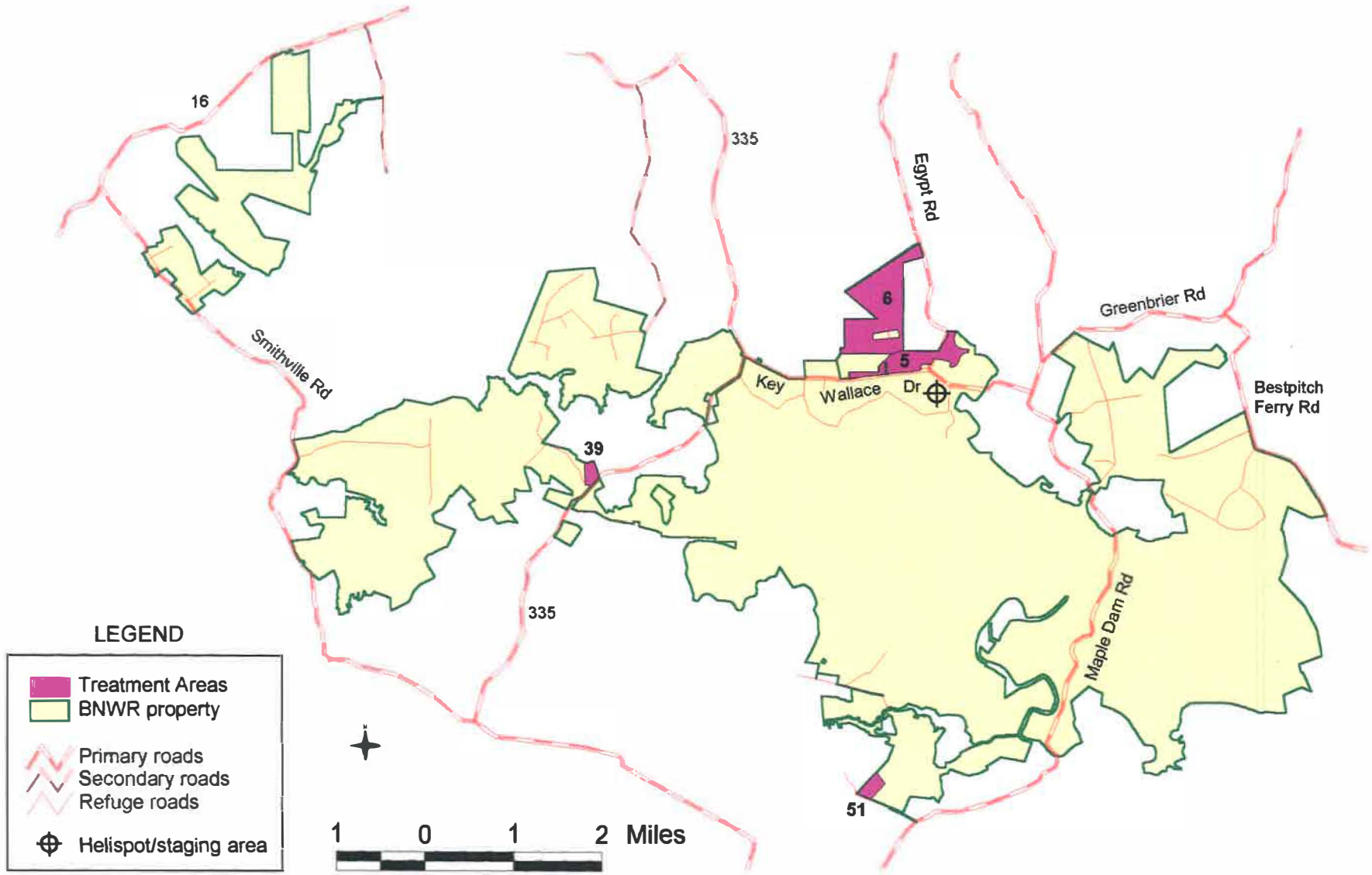
This suppression project was divided into four treatment areas (Figure 1). The project was staged from the permanent helispot located east of the fire administration building (Figure 1).

The first application was conducted on the morning of April 24 from 0615 to 1106. A total of 608 acres were treated during the first application.

The second application began on the evening of April 29 and was completed on the morning of April 30. Approximately 328 acres were treated in Block 6 on April 29. On April 30, the remainder of Block 6 was treated along with Blocks 5, 39 and 51. Approximately 280 acres were treated on April 30. The daily sortie reports are enclosed in Appendix B.

A grand total of 1216 acres were sprayed at Blackwater National Wildlife Refuge in 2000. Both applications went well with no accidents or incidents. Treatment timing based on larval and foliage development was excellent.

Figure 1.-- Location of the 2000 gypsy moth treatment areas at Blackwater National Wildlife Refuge.

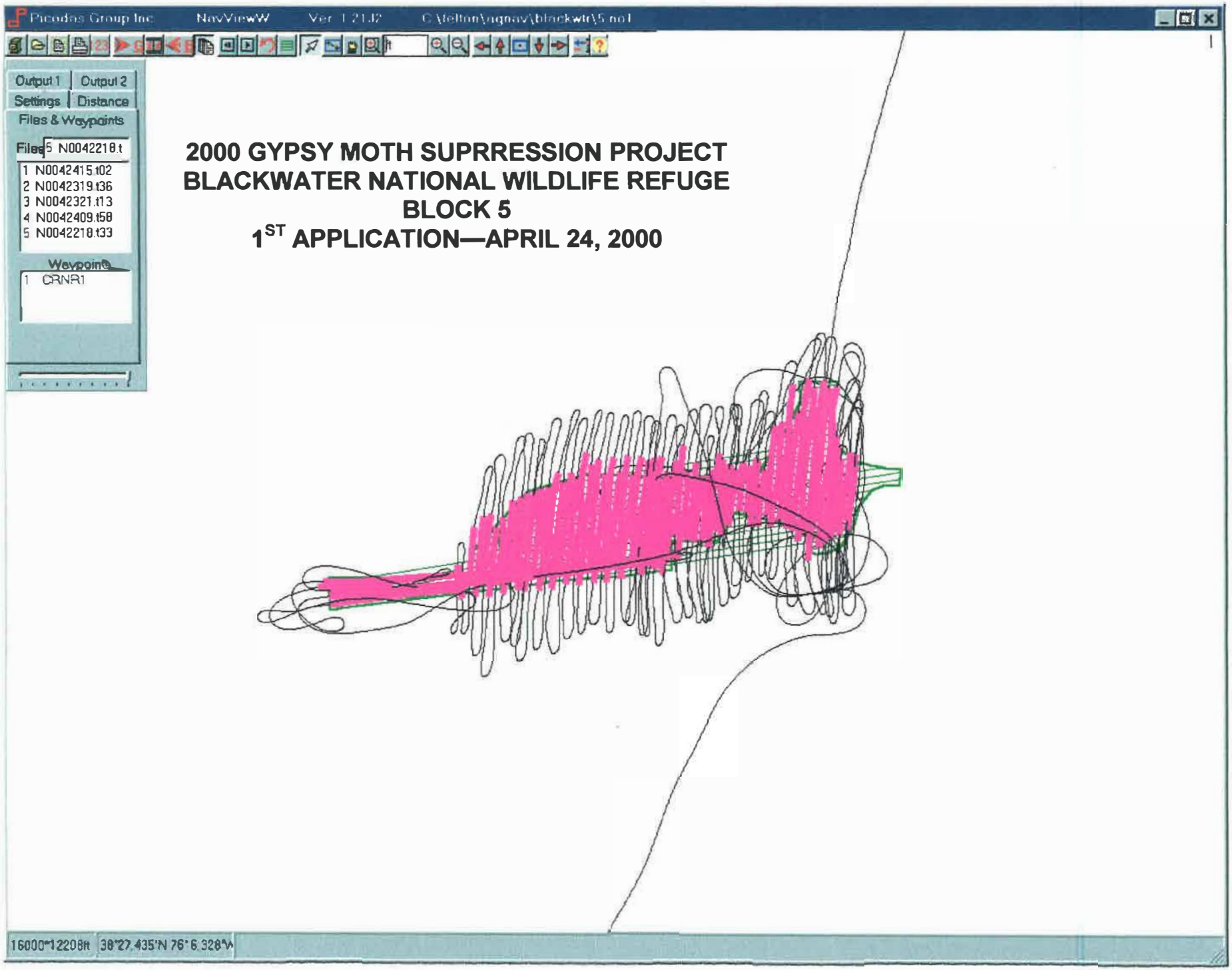


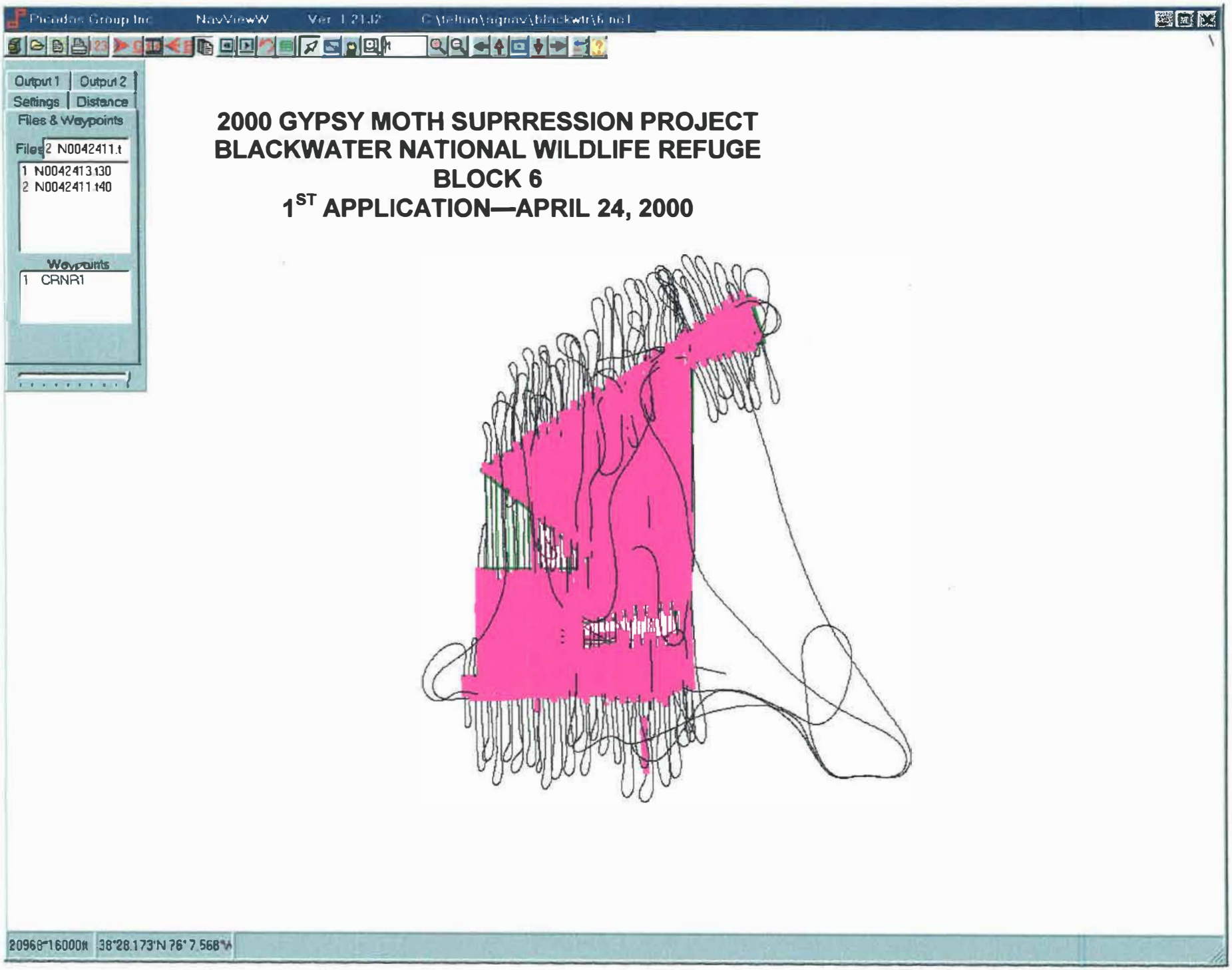
USDA Forest Service, State & Private Forestry, Morgantown, WV

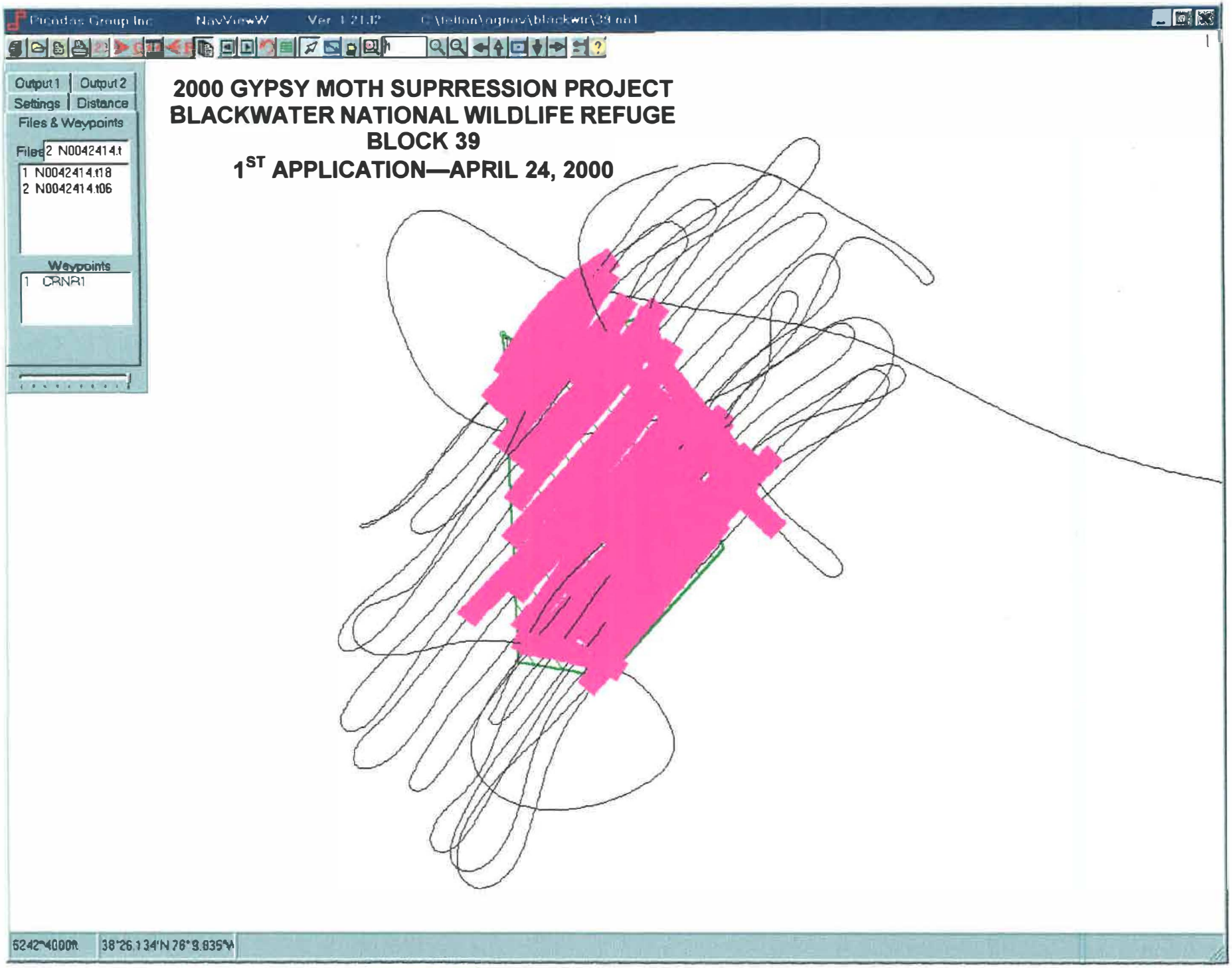
6/00 KDF

APPENDIX A

AG-NAV PRINTOUTS


Picodas Group Inc
NavViewW
Output 1
Output 2
Settings
Distance
Files & Waypoints
Files
5 N0042218.t
1 N0042415.t02
2 N0042319.t36
3 N0042321.t13
4 N0042409.t58
5 N0042218.t33
Waypoints
1 CRNR1
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 5
1ST APPLICATION—APRIL 24, 2000
16000*12208ft
38°27.435'N 76°6.328'W


Picadas Group Inc
NavViewW
Ver 1.21J2
Output 1
Output 2
Settings
Distance
Files & Waypoints
Files 2 N0042411.t
1 N0042413.t30
2 N0042411.t40
Waypoints
1 CRNR1
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 6
1ST APPLICATION—APRIL 24, 2000
20968°16000ft
38°28.173'N 76°7.568'W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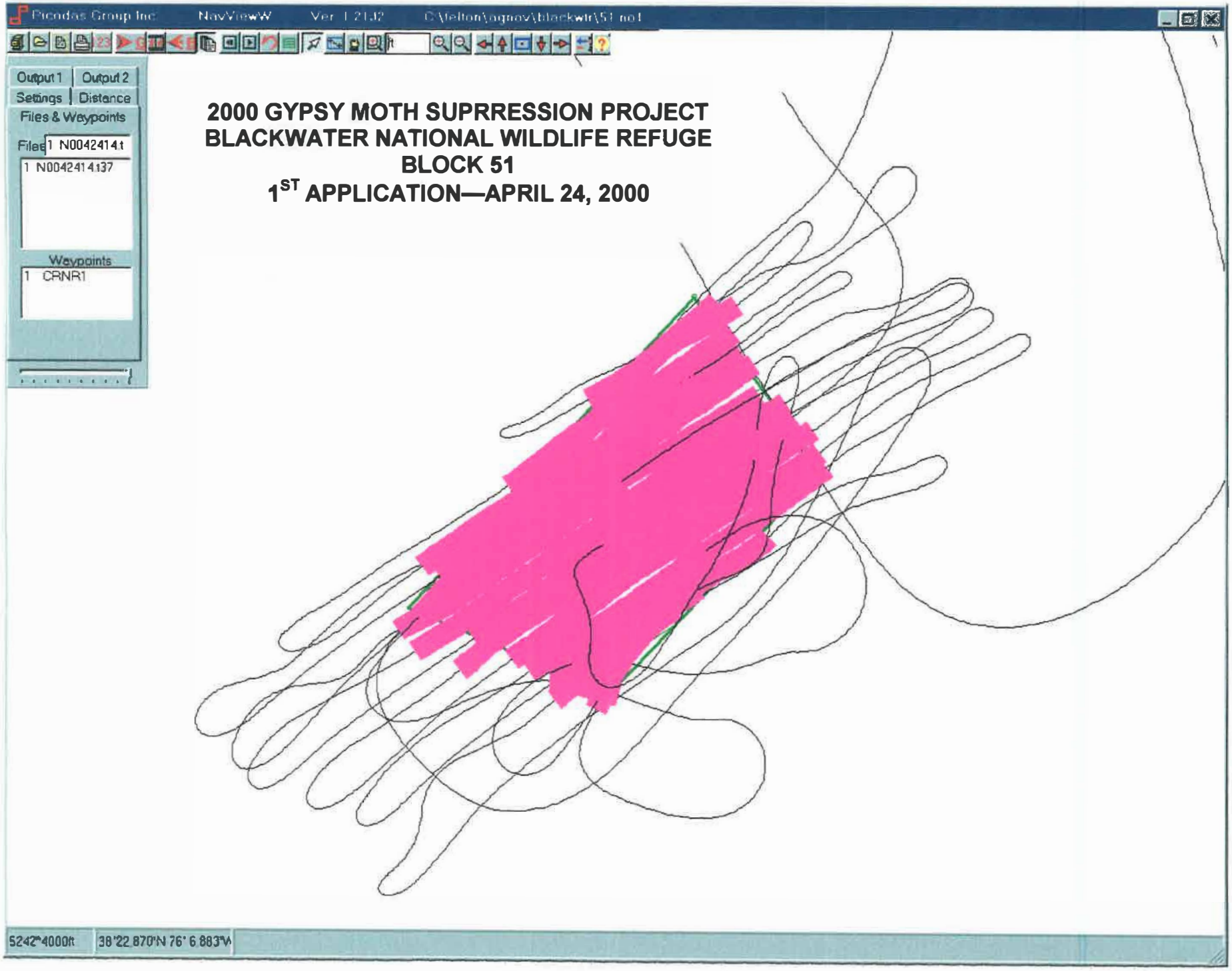
NavViewW
Output 1
Output 2
Settings
Distance
Files & Waypoints
Files 2 N0042414.t
1 N0042414.t18
2 N0042414.t06
Waypoints
1 CRNR1
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 39
1ST APPLICATION—APRIL 24, 2000
6242~4000ft
38°26.134'N 76°9.835'W


Picodas Group Inc
NavViewW
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Output 2
Settings
Distance
Files & Waypoints
Files
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1 N0042414.t37
Waypoints
1 CRNR1
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 51
1ST APPLICATION—APRIL 24, 2000
5242*4000ft
38°22.870'N 76° 6.883'W

Output 1 | Output 2
Settings | Distance
Files & Waypoints

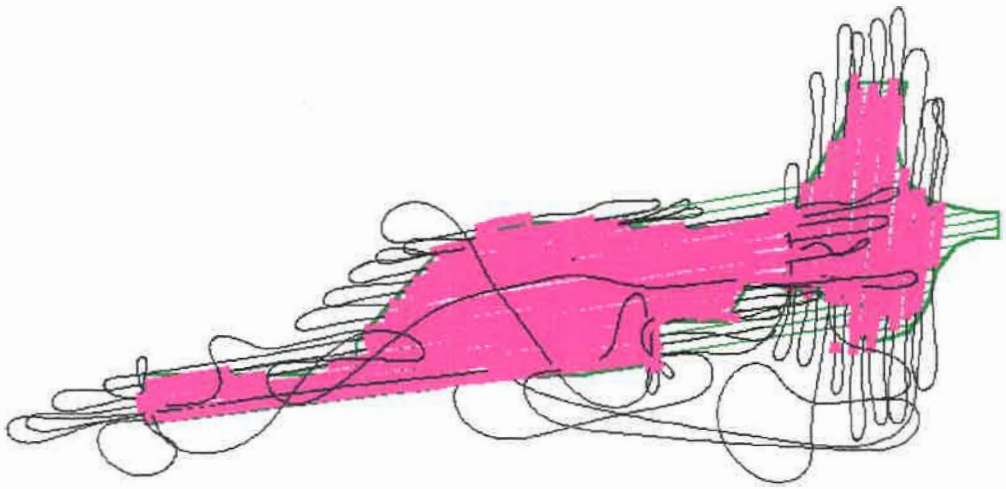
Files 1 N0043010.t

1 N0043010.t33

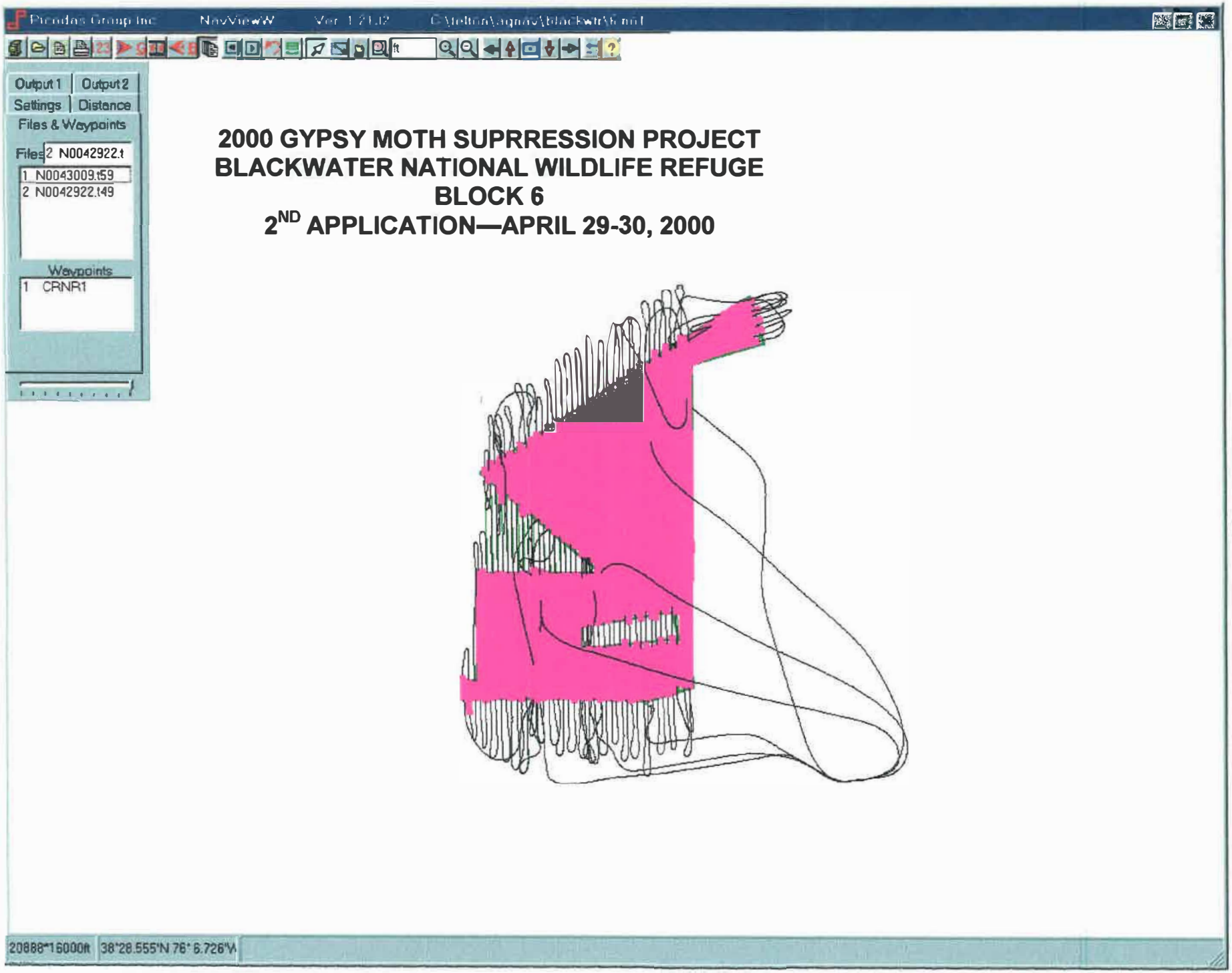
Waypoints

1 CRNR1

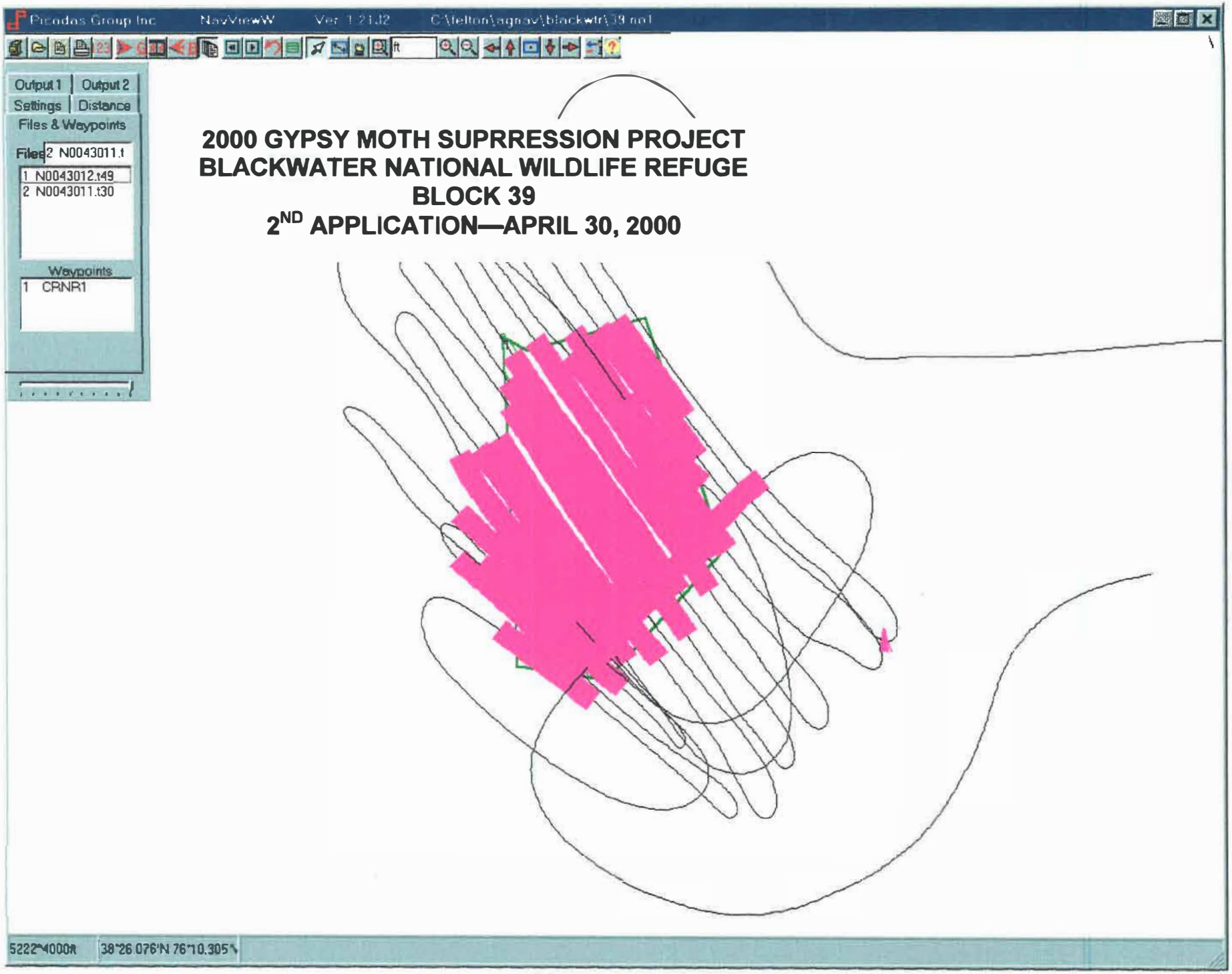
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 5
2ND APPLICATION—APRIL 30, 2000



16000*12256ft 38°27.476'N 76° 6.862'W



2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 6
2ND APPLICATION—APRIL 29-30, 2000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NavViewW
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Output 2
Settings
Distance
Files & Waypoints
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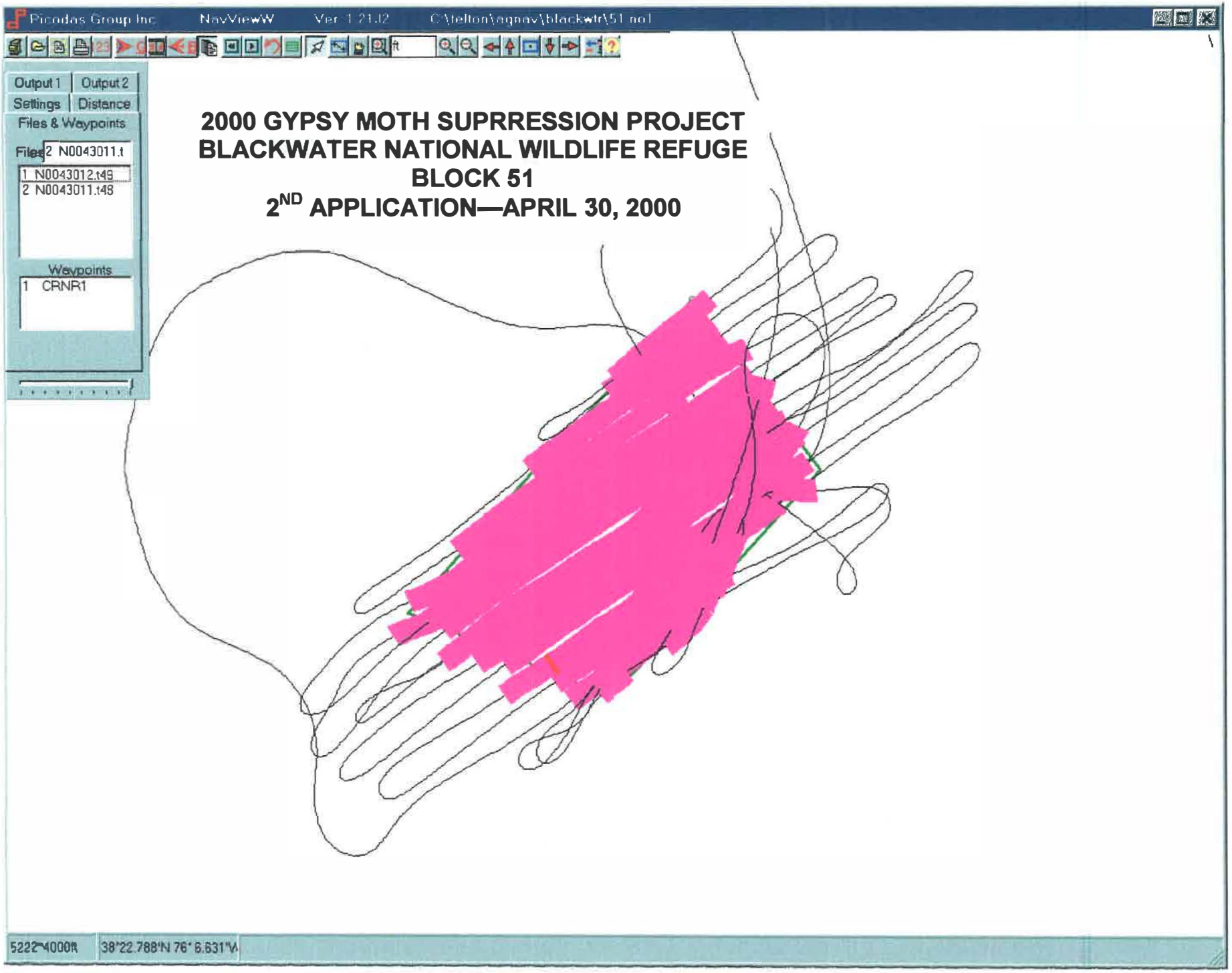
1 N0043012.t49
2 N0043011.t30
Waypoints
1 CRNR1
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 39
2ND APPLICATION—APRIL 30, 2000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NavViewW
Output 1
Output 2
Settings
Distance
Files & Waypoints
Files
2 N0043011.t
1 N0043012.t49
2 N0043011.t48
Waypoints
1 CRNR1
2000 GYPSY MOTH SUPRRESSION PROJECT
BLACKWATER NATIONAL WILDLIFE REFUGE
BLOCK 51
2ND APPLICATION—APRIL 30, 2000
38°22.788'N 76° 8.631'W

APPENDIX B

DAILY SORTIE REPORTS

DAILY SORTIE REPORT

Project coordinator: Rod Whiteman
Date: 4/24/00
Aircraft ID: N74098

Location: Blackwater NWR
Pilot: JAMES Miller

Load #	Gallons	Take off time	Return time	Acres treated	Block ID
1	82	0615	0647	109.33	5
2	82	0653	0725	109.33	5, 6
3	82	0735	0825	109.34	6
4	82	0832	0859	109.33	6
5	82	0908	1001	109.33	6
6	46	1008	1106	61.34	39, 51
	456			608	

COMMENTS (Cause of delays, accidents, reason for shut-downs etc.)

First application is complete

SIGNATURES
Project Coordinator: Rodney L Whiteman
Contractors Representative: [illegible]

Prepared by USDA, Forest Service, FPM, Morgantown, WV 5/90

DAILY SORTIE REPORT

Project coordinator: Rod Whiteman
Date: 4/22/00
Aircraft ID: N74098

Location: Blackwater Weir
Pilot: James Miller

Load #	Gallons	Take off time	Return time	Acres treated	Block ID
1	82	1851	1913	109.33	6
2	82	1917	1937	109.33	6
3	82	1941	2005	109.34	6
	246			328	

COMMENTS (Cause of delays, accidents, reason for shut-downs etc.)

First half of 2nd application
Terminated session due to darkness

Treated 328 acres for the day

SIGNATURES
Project Coordinator: Rodney L. Whiteman
Contractors Representative: John Miller

Prepared by USDA, Forest Service, FPM, Morgantown, WV 5/90

DAILY SORTIE REPORT

Project coordinator: Rod Whitenon
Date: 4/30/00
Aircraft ID: N74098

Location: Blackwater NWR
Pilot: James Miller

Load #	Gallons	Take off time	Return time	Acres treated	Block ID
1	82	0601	0639	109.33	6,5
2	82	0644	0721	109.33	5
3	46	0726	0812	61.34	39,51
	210			280	

COMMENTS (Cause of delays, accidents, reason for shut-downs etc.)

Second application was complete.

Treated 280 acres for the day.

SIGNATURES
Project Coordinator: Rodney L Whitenon

Contractors Representative: James Miller

Prepared by USDA, Forest Service, FPM, Morgantown, WV 5/90